DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-019039
Date Inspected: 03-Jan-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name:	See Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girders

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Lifting Lug Holes
B). Deck Access Holes
C). Miscellaneous Tasks

A). Lifting Lug Hole

The QAI observed the welder, Darcel Jackson ID-9967, perform the Complete Joint Penetration (CJP) groove welding of the Lifting Lug Hole (LLH) identified as WN: 1W-PP11-W3-Weld No. 4 located along the grid line W3 of the OBG identified as W1. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process and the 4.8 mm, E7018 H4R electrode as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1070A, Rev. 1. The WPS was also utilized by the QC inspector, Mike Johnson, as a reference to monitor the welding and to verify the welding parameters. The QC verification of the welding parameters was observed by the QAI and recorded as 267 amps and the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was also verified by the QAI. The welding was performed in the flat (1G) position with the weld joint in an approximately horizontal plane and the weld metal deposited from the upper side. The CJP welding was not completed during this shift and appeared to comply with contract specifications.

Later in the shift, the QAI observed Mr. Jackson perform the CJP groove welding of the LLH identified as WN: 1W-PP9.5-W3-Weld No. 4 located along the grid line W3 of the OBG identified as W1. The welding was performed utilizing the SMAW process and the 4.8 mm, E7018 H4R electrode as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1070A, Rev. 1. The WPS was also utilized by the QC inspector, Mike Johnson, as a reference to monitor the welding and to verify the welding parameters. The QC verification of the welding parameters and the surface temperatures was observed by the QAI, at random intervals and the welding and inspection appeared to be in compliance with the contract specifications. The welding was performed in the flat (1G) position with the weld joint in an approximately horizontal plane and the weld metal deposited from the upper side. The CJP welding was not completed during this shift.

The QAI also observed the welder, Mike Jiminez ID-4671, perform the Complete Joint Penetration (CJP) groove welding of the Lifting Lug Hole (LLH) identified as WN: 1W-PP11-W4-Weld No's. 3 and 4 located along the grid line W4 of the OBG identified as W1. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process and the 4.0 mm, E7018 H4R electrode as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1070A, Rev. 1. The WPS was also utilized by the QC inspector, Mike Johnson, as a reference to monitor the welding and to verify the welding parameters. The QC verification of the welding parameters was observed by the QAI and recorded as 184 amps and the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was also verified by the QCI. The welding conducted during this shift was performed in the flat (1G) position with the work in an approximately horizontal plane and the weld metal deposited from the upper side of the weld joint. The welding was completed during this shift and appeared to be in compliance with the contract specifications.

Later in the shift, the QAI observed the welder, Mr. Jiminez , perform the CJP groove welding of the LLH identified as WN: 1W-PP11-W4-Weld No. 4 located along the grid line W4 of the OBG identified as W1. The welding was performed utilizing the SMAW process and the 3.2 mm, E7018 H4R electrode as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1070A, Rev. 1. The WPS was also utilized by the QC inspector, Gary Erhsam, as a reference to monitor the welding and to verify the welding parameters. The QC verification of the welding parameters was observed by the QAI and recorded as 137 amps and the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius was also verified by the QCI. The welding conducted during this shift was performed in the overhead (4G) position with the work in an approximately horizontal plane and the weld metal deposited from the underside of the weld joint. The welding was not completed during this shift and appeared to be in compliance with the contract specifications.

The QAI also observed the Ultrasonic Testing (UT) on the Lifting Lug Hole identified as WN: 1E-PP8.5-W4, Weld No.'s W3 and W4. The testing was performed by the QC technician, Mike Johnson, utilizing a G.E. /Krautkramer USN50. The examination of the CJP groove welds was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable contract documents. The QC technician performed the required longitudinal wave technique, utilizing a 25.4 mm diameter transducer, to perform the examination for base metal soundness and the shear wave technique for the examination of weld soundness which was performed utilizing a 16 mm x 19 mm rectangular transducer. The testing was not completed during this shift..

B). Deck Access Holes

The QAI observed the welder, Jin Pei Wang ID-7299, perform the CJP welding of the Deck Access Hole (DAH)

identified as Weld Number (WN): 3W-PP19.5-W2 located on the "A" deck of the Orthotropic Box Girder (OBG) W3. The welding was performed utilizing the SMAW process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1110, Rev. 1. The WPS was also utilized by the QC inspector, Gary Erhsam, as a reference to monitor the welding and to verify the welding parameters which was recorded as 143 amps by the QC inspector. The 4.0 mm low hydrogen electrode, E7018 H4R, was utilized with the welding performed in the overhead (4G) position with work placed in an approximately horizontal plane and the weld metal deposited from the underneath side. The minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector. The CJP welding was completed during this shift which appeared to comply with the contract documents.

The QAI observed the welder, Jorge Lopez ID-6149, perform the CJP welding of the Deck Access Hole- Insert Plate (DAH-IP)identified as Weld Number (WN): 8W-PP70.5-W5-SE located on the "A" deck of the Orthotropic Box Girder (OBG) W8. The welding was performed utilizing the SMAW process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-1110, Rev. 1. The WPS was also utilized by the QC inspector, Gary Ehrsam, as a reference to monitor the welding and to verify the welding parameters which was recorded as 123 amps by the QC inspector. The 3.2 mm low hydrogen electrode, E7018 H4R, was utilized with the welding performed in the overhead (4G) position with the work placed in an approximately horizontal plane with the weld metal deposited from the under side of the groove joint. T he minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius were verified by the QC inspector. The welding was not completed during this shift and appeared to comply with the contract documents.

C). Miscellaneous Task

This QAI also performed a review and update of the project progress utilizing QA field reports and NDT reports. The updated project information was documented into the various QA tracking logs.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW welding process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs on page 4 of this report illustrate the work observed during this scheduled shift.

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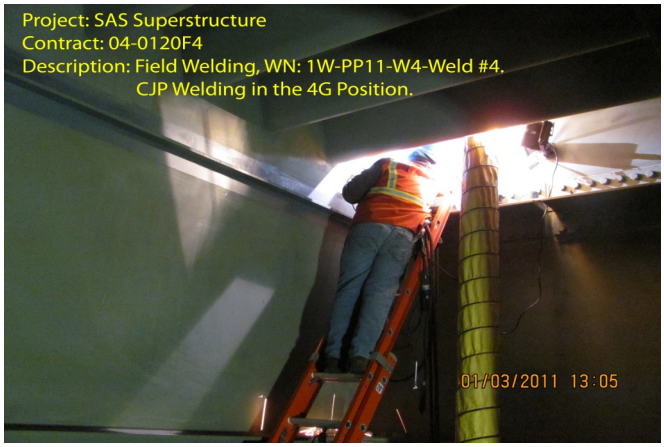

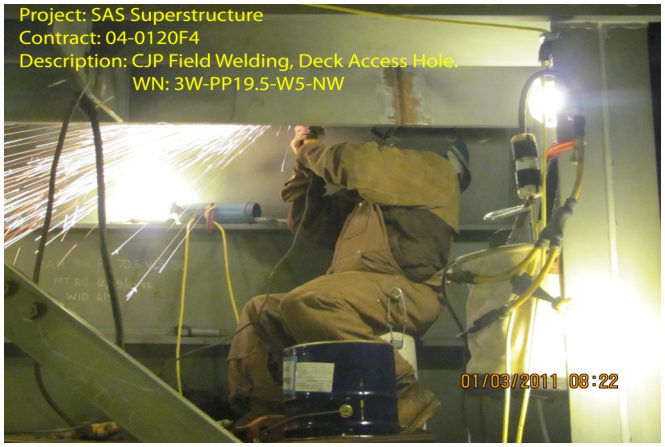

Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer